AR201-13633A

High Production Volume (HPV) Chemical Challenge Program

Test Plan

For

Butyllithium

CAS No. 109-72-8

Submitted by:

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Date:

n-Butyllithium HPV Test Plan

Plain English Summary

FMC Corporation Lithium Division is sponsoring the chemical, n-butyllithium (CAS: 109-72-8, also called butyllithium). Butyllithium is used as an initiator for polymerization in the production of automobile tires. It has specialized applications in the synthesis of pharmaceuticals.

Butyllithium is extremely reactive with air and moisture and would not exist for any significant time in the ambient air. Butyllithium solutions are pyrophoric, and catch fire if open to the air. Decomposition products are generally butane gas and corrosive hydroxide salts. It must be stored and handled in sealed systems under inert gas to prevent loss of activity. Butyllithium solutions are completely consumed in the manufacturing processes that use it. No trace is present in the final manufactured tire, pharmaceutical or other final product.

Due to the highly reactive and pyrophoric properties of butyllithium and the manner in which is stored and handled, exposure to humans or the environment is unlikely, except in cases of accidental release. In the event of an accident or spill the product will react quickly with air or moisture and burn, consuming the butyllithium entirely.

Most studies on the toxicity and chemical and physical properties of butyllithium cannot be conducted according to accepted protocols due to its pyrophoric properties. Study procedures that do not exclude air and moisture would not produce meaningful data and are of no value. Butyllithium reacts violently on exposure to aquatic systems and animal tissues, releasing flammable butane and corrosive hydroxide salts. Exposure of butyllithium to test animals would be cruel and inhumane and would not generate meaningful data as the test animals would most likely have to be sacrificed for humane reasons long before the study concluded. Thus, there is little existing data on butyllithium to submit as part of the HPV programs and no robust summaries will be accompanying this test plan.

Information can be provided on some the SIDS data points and the test plan summarize available data on each one.

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